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|---|---|
| SPAHN, GAY | |
| **ART UNIT** | **PAPER NUMBER** |
| 3673 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/796,463 | WONG ET AL. | |
| | Examiner | Art Unit | |
| | Gay Ann Spahn | 3673 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**Claims 1-9, 11-20, 22, 25-33, and 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torbet et al. (U.S. Patent Application Publication No. 2003/0221261) in view of Chapman et al. (U.S. Patent Application Publication No. 2003/0182728).**

**As to claim 1**, Torbet et al. disclose an adjustable mattress and pillow system comprising:

(a) a mattress ($1_3$) which adapts, based on a user's position (35, 36) on the mattress ($1_3$) and in response to variation of the position (see page 18, first line of paragraph no. [0199] through page 19, last line of paragraph no. [0205]), to an optimum contour for support of a the user's body (35, 36), the mattress ($1_3$) comprising a mattress top face (top surfaces of foam members $11_4$ and $11_6$) and a mattress bottom face (4-2), the mattress top face (top surfaces of foam members $11_4$ and $11_6$) being covered in part by an electrically conductive sensing mat ($22_3$-1, $22_3$-2) having a mat top outer face (4-1) for receiving and supporting the user's body (35, 36) and a mat bottom outer face (bottom surface of $22_3$-2) in substantial contact with the mattress top face

(top surfaces of foam members $11_4$ and $11_6$), the mat ($22_3$-1, $22_3$-2) comprising an electrically conductive elastomeric membrane ($22_3$-1 when sensors 44 are either embedded within layer $22_3$-1 or between layers $22_3$-1, $22_3$-2 - see page 10, paragraph [0116] wherein it states that "[d]ifferent vertical locations sensors 44 are acceptable" and "sensors 44 also can be located on or in any other members") which exhibits a decreasing electrical resistance when compressed and which covers in part the mat top outer face;

(b) one or more inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) located within the mattress ($1_3$), the compartments (12-1, 12-2, 12-3, 12-4) being positioned between the top face (top surfaces of foam members $11_4$ and $11_6$) and the bottom face (4-2) of the mattress ($1_3$) and connected to a fluid reservoir ($39_{35}$) for receiving and discharging a fluid (air, water or any other suitable liquid or gas - see page 5, paragraph no. [0070], last four lines);

(c) a pillow (20 or 86, 86') which is positioned on the top face of the mattress ($1_3$), the pillow (20 or 86, 86') comprising a top face for supporting the user's head and neck (35, 36) and a bottom face in contact with the mattress top face;

(e) a pumping/control unit (83 in Fig. 35) under microprocessor control (74) and positioned remotely from the mattress ($1_3$) and the pillow (20 or 86, 86'), the microprocessor control (74) being in electrical contact with the mat ($22_3$-1, $22_3$-2) for receiving and processing electrical signals from the mat ($22_3$-1, $22_3$-2), the pumping/control unit (83) being connected to the fluid reservoir ($39_{35}$) and the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) for transmitting fluid (air, water or any

liquid) from the reservoir ($39_{35}$) to one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and for discharging fluid (air, water or any other suitable gas or liquid) from one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) to the reservoir ($39_{35}$), wherein when the user (35, 36) reclines upon the mattress ($1_3$) and pillow (86, 86'), the microprocessor control (74):

(1) receives electrical input signals from the electrically conductive sensing mat ($22_3$-1, $22_3$-2) which vary in relationship to the width of mat area compressed by the user (35, 36) and the pressure exerted on the electrically conductive sensing mat ($22_3$-1, $22_3$-2) as the position of the user (35, 36) shifts;

(2) processes the input signals pursuant to preprogrammed instructions (algorithm store 76); and

(3) transmits an output signal to the pumping/control unit (83), and wherein depending upon the output signal, fluid (air, water or any other suitable gas or liquid) is either transmitted from the reservoir ($39_{35}$) by the pumping/control unit (83), to one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) or inflatable pillow compartments, or is discharged from one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) or inflatable pillow compartments by the pumping/control unit (83) to the reservoir ($39_{35}$) to optimize the contours of the mattress ($1_3$) relative to the position of the user (35, 36) on the mattress ($1_3$) and pillow (20 or 86, 86') and in response to variation of such position.

Torbet et al. fail to explicitly disclose that their pillow:

- adapts to an optimum contour for support of a user's head and neck, and

- has one or more inflatable pillow compartments:

- located within the pillow;

- positioned between the top face and bottom face of the pillow;

- connected to a fluid reservoir for receiving and discharging fluid; and

- connected to a pumping/control unit and a fluid reservoir for transmitting fluid from the reservoir to one or more of the pillow compartments and for discharging fluid from one or more of those pillow compartments to the reservoir.

Chapman et al. disclose an adjustable inflatable pad (1 - including head section zone 4):

- which adapts to an optimum contour for support of a user's head and neck, and

- which has one or more inflatable pillow compartments (11, 12 in Figs. 2-4):

- located within the pad/pillow (1);

- positioned between the top face and bottom face of the pillow (1);

- connected to a fluid reservoir (pump 6) for receiving and discharging fluid (air); and

- connected to a pumping/control unit (50) and a fluid reservoir (6) for transmitting fluid (air) from the reservoir to one or more of the pillow compartments (11, 12) and for discharging fluid (air) from one or more of the pillow compartments (11, 12) to the reservoir (6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable mattress and pillow system of Torbet et al. to include the inflation control system of Chapman et al. in order to provide a pillow that

adjusts by inflation or deflation of the chambers therein dependent upon the changing position of the user on the bed similar to the adjustment of the mattress.

Chapman et al. appear to disclose the adjustable inflatable pad for use as a pad covering the head, torso, upper leg, and heel sections of a user. However, to have formed the Chapman et al. pad of any particular size including a pillow size, thus allowing for any particular use around or under any given section of a user including the head, while also saving on costs and material, as well as place, or utilize, such smaller head pad upon the adjustable mattress of Torbet et al., thus providing Torbet et al. with a pillow pad for the head of a user, as is customarily employed by anyone sleeping or lying upon a mattress, would have constituted an obvious expedient to one having ordinary skill in the art at the time the invention was made as taught by Chapman et al. and as it is widely held that where the only difference between the prior ad and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

**As to claim 2**, Torbet et al. in view of Chapman et al. discloses the system of claim 1 as discussed above, and Torbet et al. further disclose that the pumping/control unit (83) is connected to the fluid reservoir ($39_{35}$) and inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and the inflatable pillow compartments (11, 12) by a plurality of conduits ($9_3$-1, $9_3$-2, $9_3$-3, $9_3$-4) and the transmission of fluid (air, water or any other

suitable gas or liquid) from the reservoir to the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and the inflatable pillow compartments (11,12), and discharge of fluid (air, water or any other suitable gas or liquid) from the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and the inflatable pillow compartments (11, 12) to the reservoir ($39_{35}$), is regulated by transmission of the output signal to both the pumping/control unit (83) and conduit valves ($37_{35}$) which open and close in response to the output signal.

**As to claim 3**, Torbet et al. in view of Chapman et al. discloses the system of claim 2 as discussed above, and Torbet et al. further disclose that the conduits are flexible pipes or hoses ($9_3$-1, $9_3$-2, $9_3$-3, $9_3$-4), and that the mat ($22_3$-1, $22_3$-2) comprises electrically conductive elastomers sandwiched in between the mat top inner face and the mat bottom inner face.

**As to claim 4**, Torbet et al. in view of Chapman et al. discloses the system (1) of claim 3 as discussed above, and Torbet et al. further disclose that the pumping/control unit (83) is a pump.

**As to claim 5**, Torbet et al. in view of Chapman et al. discloses the system (1) of claim 1 as discussed above, and Torbet et al. further disclose that the electrically conductive sensing mat ($22_3$-1, $22_3$-2) is affixed to the mattress top face (top surfaces of foam members $11_4$ and $11_6$).

**As to claim 6**, Torbet et al. in view of Chapman et al. discloses the system of claim 1 as discussed above, and Torbet et al. further disclose that the fluid is a liquid (water or any other suitable liquid - see page 5, paragraph no. [0070], last four lines).

**As to claim 7**, Torbet et al. in view of Chapman et al. discloses the system of claim 1 as discussed above, and Torbet et al. further disclose that the fluid is a gas (air or any other suitable gas - see page 5, paragraph no. [0070], last four lines).

**As to claim 8**, Torbet et al. in view of Chapman et al. discloses the system of claim 4 as discussed above, and Torbet et al. further disclose that the fluid is a liquid (water or any other suitable liquid - see page 5, paragraph no. [0070], last four lines).

**As to claim 9**, Torbet et al. in view of Chapman et al. discloses the system of claim 1 as discussed above, and Torbet et al. further disclose that the pillow (86, 86') is affixed to the mattress top face.

**As to claim 11**, Torbet et al. in view of Chapman et al. discloses the system of claim 1 as discussed above, and Torbet et al. further disclose that the mattress ($1_3$) comprises a cushioning material (foam members 11-1 through 11-7; non-woven quilted batting 3; and bottom member 14) that envelops the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4).

**As to claim 12**, Torbet et al. disclose an adjustable mattress and pillow system comprising:

(a) a mattress ($1_3$) which adapts, based on a user's position (35, 36) on the mattress ($1_3$) and in response to variation of such position, to an optimum contour for support of a user's body (35, 36), the mattress ($1_3$) comprising a mattress top face (top surfaces of foam members $11_4$ and $11_6$) and a mattress bottom face (4-2), the mattress top face (top surfaces of foam members $11_4$ and $11_6$) being substantially covered by an electrically conductive sensing mat (top members $22_3$-1, $22_3$-2) having a mat top outer

face (top surface of top member $22_3$-1) for receiving and supporting a user's body (35, 36) and a mat bottom outer face (bottom surface of top member $22_3$-2) in substantial contact with the mattress top face (top surfaces of foam members $11_4$ and $11_6$), the electrically conductive sensing mat (top members $22_3$-1, $22_3$-2) comprising an electrically conductive elastomeric membrane which exhibit a decreasing electrical resistance when compressed and which substantially covers the mat top outer face;

(b) one or more inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) located within the mattress ($1_3$), the compartments (12-1, 12-2, 12-3, 12-4) being

(1) positioned between the top face (top surfaces of foam members $11_4$ and $11_6$) and bottom face (4-2) of the mattress ($1_3$),

(2) connected to a fluid reservoir ($39_{35}$) for receiving fluid (air, water or any other suitable gas or liquid - see page 5, last four lines of paragraph no. [0070]), and

(3) provided with at least one fluid vent ($37_{35}$) under microprocessor (74) control for discharge of fluid (air, water or any other suitable gas or liquid);

(c) a pillow (20 or 86, 86') which is positioned on the top face (top surfaces of 11-4 and 11-6) of the mattress ($1_3$), the pillow (20 or 86, 86') comprising a top face for supporting a user's head and neck (35, 36) and a bottom face which is substantially in contact with the mat top face;

(e) a pumping/control unit (83 in Fig. 35) under microprocessor control (74) and positioned remotely from the mattress ($1_3$) and pillow (20 or 86, 86'), the

pumping/control unit (83) being connected to a fluid reservoir ($39_{35}$) and the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) for transmitting fluid (air, water, etc.) from the reservoir ($39_{35}$) to one or more of the compartments inflatable mattress (12-1, 12-2, 12-3, 12-4), wherein the microprocessor control (74)

(1) is in electrical contact with the electrically conductive sensing mat ($22_3$-1, $22_3$-2) for receiving and processing electrical signals from the mat ($22_3$-1, $22_3$-2) which vary in relationship to the width of mat area compressed by the user (35, 36) and the pressure exerted on the mat ($22_3$-1, $22_3$-2) as the position of the user (35, 36) shifts,

(2) processes those signals pursuant to preprogrammed instructions (76), and

(3) transmits an output signal to the pumping/control unit (83) and fluid vents ($37_{35}$), and wherein, on the basis of the output signal, fluid (air, water, etc.) is either transmitted from the reservoir ($39_{35}$) by the pumping/control unit (83) to one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) or inflatable pillow compartments, or is discharged from one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) or inflatable pillow compartments by a fluid vent ($37_{35}$) to optimize the contours of the mattress ($1_3$) relative to the user's position (35, 36) on the mattress ($1_3$) and pillow (20 or 86, 86') and in response to variation of such position.

Torbet et al. fail to explicitly disclose that their pillow:

- adapts to an optimum contour for support of a user's head and neck, and
- has one or more inflatable pillow compartments:
    - located within the pillow;

- positioned between the top face and bottom face of the pillow;

- connected to a fluid reservoir for receiving fluid; and

- provided with at least one fluid vent under microprocessor control for discharge of fluid;

- connected to the pumping/control unit under microprocessor control and the fluid reservoir for transmitting fluid from the reservoir to one or more of the inflatable pillow compartments.

Chapman et al. disclose an adjustable inflatable pad (1 - including head section zone 4):

- which adapts to an optimum contour for support of a user's head and neck, and

- which has one or more inflatable pillow compartments (11, 12):

- located within the pad/pillow (1);

- positioned between the top face and bottom face of the pillow;

- connected to a fluid reservoir (6) for receiving fluid (air); and

- provided with at least one fluid vent (7) under microprocessor control for discharge of fluid (air);

- being connected to the pumping/control unit (50) under microprocessor control and the fluid reservoir (6) for transmitting fluid (air) from the reservoir (6) to one or more of the inflatable pillow compartments (11, 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable mattress and pillow system of Torbet et al. to include the inflation control system of Chapman et al. in order to provide a pillow that

adjusts by inflation or deflation of the chambers therein dependent upon the changing position of the user on the bed similar to the adjustment of the mattress.

Chapman et al. appear to disclose the adjustable inflatable pad for use as a pad covering the head, torso, upper leg, and heel sections of a user. However, to have formed the Chapman et al. pad of any particular size including a pillow size, thus allowing for any particular use around or under any given section of a user including the head, while also saving on costs and material, as well as place, or utilize, such smaller head pad upon the adjustable mattress of Torbet et al., thus providing Torbet et al. with a pillow pad for the head of a user, as is customarily employed by anyone sleeping or lying upon a mattress, would have constituted an obvious expedient to one having ordinary skill in the art at the time the invention was made as taught by Chapman et al. and as it is widely held that where the only difference between the prior ad and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

**As to claim 13**, Torbet et al. in view of Chapman et al. discloses the system of claim 12 as discussed above, and Torbet et al. further disclose that the pumping/control unit (83) is connected to the fluid reservoir ($39_{35}$) and inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and the inflatable pillow compartments (11, 12) by a plurality of intake conduits ($9_3$-1, $9_3$-2, $9_3$-3, $9_3$-4), and the transmission of fluid (air, water, etc.)

from the reservoir ($39_{35}$) to the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and the inflatable pillow compartments (11, 12) and the discharge of fluid (air, water, etc.) from the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and inflatable pillow compartments (11, 12) through the vents ($37_{35}$), is regulated by transmission of the output signal to both the pumping/control unit (83) and intake conduit valves and fluid vent valves ($37_{35}$) which open and close in response to the output signal.

**As to claim 14**, Torbet et al. in view of Chapman et al. disclose the system of claim 13 as discussed above, and Torbet et al. further disclose that the intake conduits ($9_3$-1, $9_3$-2, $9_3$-3, $9_3$-4) and fluid vent ($37_{35}$) are flexible pipes or hoses and wherein the electrically conductive sensing mat ($22_3$-1, $22_3$-2) comprises electrically conductive elastomers ($68_{35}$) sandwiched in between the electrically conductive sensing mat top inner face (bottom surface of $22_3$-1) and the electrically conductive sensing mat bottom inner face (top surface of $22_3$-2).

**As to claim 15**, Torbet et al. in view of Chapman et al. discloses the system of claim 14 as discussed above, and Torbet et al. further disclose that the pumping/control unit (83) is a pump.

**As to claim 16**, Torbet et al. in view of Chapman et al. discloses the system of claim 12 as disclosed above, and Torbet et al. further disclose that the electrically conductive sensing mat ($22_3$-1, $22_3$-2) is affixed to the mattress top face (top surfaces of 11-4 and 11-6).

**As to claim 17**, Torbet et al. in view of Chapman et al. discloses the system of claim 12 as discussed above, and Torbet et al. further disclose that the fluid is a liquid (water or any other suitable liquid - see page 5, paragraph no. [0070], last four lines).

**As to claim 18**, Torbet et al. in view of Chapman et al. discloses the system of claim 12 as discussed above, and Torbet et al. further disclose that the fluid is a gas (air or any other suitable gas - see page 5, paragraph no. [0070], last four lines).

**As to claim 19**, Torbet et al. in view of Chapman et al. discloses the system of claim 14 as discussed above, and Torbet et al. further disclose that the fluid is a liquid or gas (air, water or any other suitable gas or liquid - see page 5, paragraph no. [0070], last four lines).

**As to claim 20**, Torbet et al. in view of Chapman et al. discloses the system of claim 12 as discussed above, and Torbet et al. further disclose that the pillow (86, 86') is affixed to the mattress top face (see Fig. 22).

**As to claim 22**, Torbet et al. in view of Chapman et al. discloses the system of claim 1 as discussed above, and Torbet et al. further disclose that the mattress ($1_3$) comprises a cushioning material (foam members 11-1 through 11-7; non-woven quilted batting 3; and bottom member 14) that envelops the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4).

**As to claim 25**, Torbet et al. in view of Chapman et al. discloses the system of either claim 1 or claim 12 as discussed above, and Torbet et al. further disclose that the pumping/control unit (83) is under the control of a control device (99) that incorporates the microprocessor (74) and functions as a mass flow controller in which the

microprocessor (74) has sensing ($44_{35}$, $68_{35}$) and signal processing (78) elements in communication with valve drives that operate valves ($37_{35}$) to control the mass flow rate of fluid (air, water, etc.) to and from the mattress compartments (12-1, 12-2, 12-3, 12-4) and the pillow compartments (11, 12).

**As to claim 26**, Torbet et al. in view of Chapman et al. discloses the system of either claim 1 or claim 12 as discussed above, and Torbet et al. further disclose that the microprocessor (74) is preprogrammed (76) with a set point established by an external input supplied by the user (35, 36) or a third party in order to fix a desired fluid flow rate, and hence mattress and pillow contour, in response to certain signals transmitted from the mat ($22_3$-1, $22_3$-2).

**As to claim 27**, Torbet et al. disclose a method of supporting a body element comprising:

(a) providing an adjustable mattress and pillow system wherein a mattress ($1_3$) adapts, based on a user's position (35, 36) on the mattress ($1_3$)and in response to variation of such position, to an optimum contour for support of a the user's body (35, 36), the mattress ($1_3$) comprising a mattress top face (top surfaces of 11-4 and 11-6) and a mattress bottom face (4-2), the mattress top face (top surfaces of 11-4 and 11-6) being covered in part by an electrically conductive sensing mat ($22_3$-1, $22_3$-2) having a mat top outer face (top surface of $22_3$-1) for receiving and supporting a user's body (35, 36) and a mat bottom outer face (bottom surface of $22_3$-2) in substantial contact with the mattress top face (top surfaces of 11-4 and 11-6), the electrically conductive sensing mat ($22_3$-1, $22_3$-2) comprising an electrically conductive elastomeric membrane which

exhibits a decreasing electrical resistance when compressed and which substantially covers the mat top outer face (top surface of $22_3$-1);

(b) providing one or more inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) located within the mattress ($1_3$), the compartments (12-1, 12-2, 12-3, 12-4) being

(1) positioned between the top face (top surfaces of 11-4 and 11-6) and bottom face (4-2) of the mattress ($1_3$)

(2) connected to a fluid reservoir ($39_{35}$) for receiving fluid (air, water, or other suitable liquid or gas - see page 5, paragraph no. [0070], last four lines), and

(3) provided with at least one fluid vent ($37_{35}$) under microprocessor control (74) for discharge of fluid (air, water, etc.);

(c) providing a pillow (20 or 86, 86') which is positioned on the top face of the mattress ($1_3$), the pillow (20 or 86, 86') comprising a top face for supporting a user's head and neck (35, 36) and a bottom face which is substantially in contact with the mat top face;

(e) providing a pumping/control unit (83) under microprocessor control (74) and positioned remotely from the mattress ($1_3$) and pillow (20 or 86, 86'), the pumping/control unit (83) being connected to a fluid reservoir ($39_{35}$) and the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) for transmitting fluid (air, water, etc.) from the reservoir ($39_{35}$) to one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) wherein a user (35, 36) is positioned upon the mattress top face and pillow (20 or 86, 86') and the microprocessor control (74)

(1) is in electrical contact with the mat ($22_3$-1, $22_3$-2) for receiving and processing electrical signals from the mat ($22_3$-1, $22_3$-2) which vary in relationship to the width of mat area compressed by the user (35, 36) and the pressure exerted on the mat ($22_3$-1, $22_3$-2) as the position of the user (35, 36) shifts,

(2) processes those signals pursuant to preprogrammed instructions (76) and,

(3) transmits an output signal to the pumping/control unit (83) and fluid vents ($37_{35}$), and wherein, on the basis of the output signal, fluid (air, water, etc.) is either transmitted from the reservoir ($39_{35}$) by the pumping/control unit (83) to one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) or inflatable pillow compartments, or is discharged from one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) or inflatable pillow compartments by a fluid vent ($37_{35}$) to optimize the contours of the mattress ($1_3$) and pillow relative to the user's position (35, 36) on the mattress ($1_3$) and pillow (20 or 86, 86') and in response to variation of such position.

Torbet et al. fail to explicitly disclose that their pillow:

- adapts to an optimum contour for support of a user's head and neck, and
- has one or more inflatable pillow compartments:
    - located within the pillow;
    - positioned between the top face and bottom face of the pillow;
    - connected to a fluid reservoir for receiving fluid; and
    - provided with at least one fluid vent under microprocessor control for discharge of fluid;

- being connected to the pumping/control unit and the fluid reservoir for transmitting fluid from the reservoir for transmitting fluid from the reservoir to one of more of the inflatable pillow compartments.

Chapman et al. disclose an adjustable inflatable pad (1 - including head section zone 4):

- which adapts to an optimum contour for support of a user's head and neck, and
- which has one or more inflatable pillow compartments (11, 12):
  - located within the pad/pillow (1);
  - positioned between the top face and bottom face of the pillow (1);
  - connected to a fluid reservoir (6) for receiving fluid (air); and
  - provided with at least one fluid vent (7) under microprocessor control for discharge of fluid (air);
  - being connected to the pumping/control unit (50) and the fluid reservoir (6) for transmitting fluid (air) from the reservoir (6) to one or more of the inflatable pillow compartments (11, 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable mattress and pillow system of Torbet et al. to include the inflation control system of Chapman et al. in order to provide a pillow that adjusts by inflation or deflation of the chambers therein dependent upon the changing position of the user on the bed similar to the adjustment of the mattress.

Chapman et al. appear to disclose the adjustable inflatable pad for use as a pad covering the head, torso, upper leg, and heel sections of a user. However, to have

formed the Chapman et al. pad of any particular size including a pillow size, thus allowing for any particular use around or under any given section of a user including the head, while also saving on costs and material, as well as place, or utilize, such smaller head pad upon the adjustable mattress of Torbet et al., thus providing Torbet et al. with a pillow pad for the head of a user, as is customarily employed by anyone sleeping or lying upon a mattress, would have constituted an obvious expedient to one having ordinary skill in the art at the time the invention was made as taught by Chapman et al. and as it is widely held that where the only difference between the prior ad and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

**As to claim 28**, Torbet et al. in view of Chapman et al. discloses the method of claim 27 as discussed above, and Torbet et al. further disclose that the pumping/control unit (83) is connected to the fluid reservoir ($39_{35}$) and inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and the inflatable pillow compartments (11, 12) by a plurality of intake conduits (9-1, 9-2, 9-3, 9-4), and the transmission of fluid (air, water or any other suitable gas or liquid) from the reservoir ($39_{35}$) to the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and the inflatable pillow compartments (11, 12) and the discharge of fluid (air, water or any other suitable gas or liquid) from the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) and the inflatable pillow compartments

(11, 12) through the vents, is regulated by transmission of the output signal to both the pumping/control unit (83) and intake conduit valves and fluid vent valves ($37_{35}$) which open and close in response to the output signal.

**As to claim 29**, Torbet et al. in view of Chapman et al. discloses the method of claim 28 as discussed above, and Torbet et al. further disclose that the intake conduits (9-1, 9-2, 9-3, 9-4) and fluid vent ($37_{35}$) are flexible pipes or hoses, and wherein the mat ($22_3$-1, $22_3$-2) comprises electrically conductive elastomers ($68_{35}$) sandwiched in between the mat top inner face (bottom surface of $22_3$-1) and the mat bottom inner face (top surface of $22_3$-2).

**As to claim 30**, Torbet et al. in view of Chapman et al. discloses the method of claim 27 as disclosed above, and Torbet et al. further disclose that the pumping/control unit (83) is a pump.

**As to claim 31**, Torbet et al. in view of Chapman et al. discloses the method of claim 27 as disclosed above, and Torbet et al. further disclose that the electrically conductive sensing mat ($22_3$-1, $22_3$-2) is affixed to the mattress top face (top surfaces of 11-4 and 11-6).

**As to claim 32**, Torbet et al. in view of Chapman et al. discloses the method of claim 27 as discussed above, and Torbet et al. further disclose that the fluid is a liquid (water or any other suitable liquid) or gas (air or any other suitable gas - see page 5, paragraph no. [0070], last four lines).

**As to claim 33**, Torbet et al. in view of Chapman et al. discloses the method of claim 27 as discussed above, and Torbet et al. further disclose that the pillow (86, 86') is affixed to the mattress top face (see Fig. 22).

**As to claim 35**, Torbet et al. in view of Chapman et al. discloses the method of claim 27 as discussed above, and Torbet et al. further disclose that the mattress ($1_3$) comprises a cushioning material (foam members 11-1 through 11-7; non-woven quilted batting 3; and bottom member 14) the envelops the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4).

**As to claim 36**, Torbet et al. in view of Chapman et al. discloses the method of claim 27 as discussed above, and Torbet et al. further disclose the pumping/control unit (83) is under the control of a control device that incorporates the microprocessor (74) and functions as a mass flow controller in which the microprocessor (74) has sensing (sensors $68_{35}$, $44_{35}$) and signal processing elements (computational unit 78) in communication with valve drives that operate valves ($37_{35}$) to control the mass flow rate of fluid (air, water, etc.) to and from the mattress compartments (12-1, 12-2, 12-3, 12-4) and the pillow compartments (11, 12).

**As to claim 37**, Torbet et al. in view of Chapman et al. discloses the method of claim 27 as discussed above, and Torbet et al. further disclose the microprocessor (74) is preprogrammed (76) with a set point established by an external input supplied by the user (35, 36) or a third party in order to fix a desired fluid flow rate, and hence mattress ($1_3$) and pillow contour, in response to certain signals transmitted from the mat ($22_3$-1, $22_3$-2).

**As to claim 38**, Torbet et al. disclose an adjustable mattress and pillow system comprising:

(a) a mattress ($1_3$) which adapts, based on a user's position (35, 36) on the mattress ($1_3$) and in response to variation of such position, to an optimum contour for support of a the user's body (35, 36), the mattress ($1_3$) comprising a mattress top face (top surfaces of 11-4 and 11-6) and a mattress bottom face (4-2), the mattress top face (top surfaces of 11-4 and 11-6) being covered in part by a sensing mat ($22_3$-1, $22_3$-2) having a mat top outer face (top surface of $22_3$-1) for receiving and supporting a user's body (35, 36) and a mat bottom outer face (bottom surface of $22_3$-2) in substantial contact with the mattress top face (top surfaces of 11-4 and 11-6), the mat ($22_3$-1, $22_3$-2) comprising an elastomeric sensing membrane which covers in part the mat top outer face and which, when compressed, transmits a sensing signal;

(b) one or more inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) located within the mattress ($1_3$), the compartments (12-1, 12-2, 12-3, 12-4) being positioned between the top face (top surfaces of 11-4 and 11-6) and bottom face (4-2) of the mattress ($1_3$) and connected to a fluid reservoir ($39_{35}$) for receiving or discharging fluid (air, water, etc.);

(c) a pillow (20 or 86, 86') which is positioned on the top face of the mattress ($1_3$), the pillow comprising a top face for supporting a user's head and neck (35, 36) and a bottom face which is substantially in contact with the mattress top face;

(e) a pumping/control unit (83) under microprocessor control (74) and positioned remotely from the mattress ($1_3$) and pillow (20 or 86, 86'), the microprocessor control

(74) being in electrical contact with the mat ($22_3$-1, $22_3$-2) for receiving and processing sensing signals from the mat ($22_3$-1, $22_3$-2) into electrical signals, the pumping/control unit (83) being connected to a fluid reservoir ($39_{35}$) and the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) for transmitting fluid (air, water, etc.) from the reservoir ($39_{35}$) to one or more of those compartments (12-1, 12-2, 12-3, 12-4) and for discharging fluid (air, water, etc.) from one or more of those compartments (12-1, 12-2, 12-3, 12-4) to the reservoir ($39_{35}$), wherein, when the user (35, 36) reclines upon the mattress ($1_3$) and pillow (20 or 86, 86'), the microprocessor control (74)

(1) receives and processes into electrical signals input sensing signals from the sensing mat ($22_3$-1, $22_3$-2) which vary in relationship to the width of mat area compressed by the user (35, 36) and the pressure exerted on the sensing mat ($22_3$-1, $22_3$-2) as the position of the user (35, 36) shifts,

(2) processes those signals pursuant to preprogrammed instructions (76) and,

(3) transmits an output signal to the pumping/control unit (83), and wherein on the basis of the output signal, fluid (air, water, etc.) is either transmitted from the reservoir ($39_{35}$) by the pumping/ control unit (83) to one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) or inflatable pillow compartments, or is discharged from one or more of the inflatable mattress compartments (12-1, 12-2, 12-3, 12-4) or inflatable pillow compartments by the pumping/control unit (83) to the reservoir ($39_{35}$) to optimize the contours of the mattress ($1_3$) relative to the user's position (35, 36) on the mattress ($1_3$) and pillow and in response to variation of such position.

Torbet et al. fail to explicitly disclose that their pillow:

- adapts to an optimum contour for support of a user's head and neck, and

- has one or more inflatable pillow compartments:

- located within the pillow;

- positioned between the top face and bottom face of the pillow;

- connected to a fluid reservoir for receiving and discharging fluid; and

- connected to a pumping/control unit and the fluid reservoir for transmitting fluid from the reservoir to one or more of the pillow compartments and for discharging fluid from one or more of the pillow compartments to the reservoir.

Chapman et al. disclose an adjustable inflatable pad (1 - including head section zone 4):

- which adapts to an optimum contour for support of a user's head and neck, and

- which has one or more inflatable pillow compartments (11, 12 in Figs. 2-4):

- located within the pad/pillow (1);

- positioned between the top face and bottom face of the pillow (1);

- connected to a fluid reservoir (pump 6) for receiving and discharging fluid (air); and

- connected to a pumping/control unit (50) and a fluid reservoir (6) for transmitting fluid (air) from the reservoir to one or more of the pillow compartments (11, 12) and for discharging fluid (air) from one or more of those pillow compartments (11, 12) to the reservoir (6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable mattress and pillow system of Torbet et al. to include the inflation control system of Chapman et al. in order to provide a pillow that adjusts by inflation or deflation of the chambers therein dependent upon the changing position of the user on the bed similar to the adjustment of the mattress.

Chapman et al. appear to disclose the adjustable inflatable pad for use as a pad covering the head, torso, upper leg, and heel sections of a user. However, to have formed the Chapman et al. pad of any particular size including a pillow size, thus allowing for any particular use around or under any given section of a user including the head, while also saving on costs and material, as well as place, or utilize, such smaller head pad upon the adjustable mattress of Torbet et al., thus providing Torbet et al. with a pillow pad for the head of a user, as is customarily employed by anyone sleeping or lying upon a mattress, would have constituted an obvious expedient to one having ordinary skill in the art at the time the invention was made as taught by Chapman et al. and as it is widely held that where the only difference between the prior ad and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

**As to claim 39**, Torbet et al. in view of Chapman et al. discloses the system of claim 38 as discussed above, and Torbet et al. in view of Chapman et al. fail to explicitly

disclose that the sensing mat utilizes either an infrared sensor, an ultrasonic detector, a digital image scanner, an electrically conductive elastomeric membrane, or electrically conductive silicon rubber to transmit input sensing signals from the sensing mat to the microprocessor control.

However, it is well settled that "[g]enerally, it is not invention to change size or degree of thing or of any feature or function of machine or manufacture; there is no invention where change does not involve different concept, purposes, or objects, but amounts to doing the same thing substantially the same way with better results." (See *Hobbs v. Wisconsin Power and Light Company et al.*, 115 USPQ 371 (CA 1957).) Thus, since any one of an infrared sensor, ultrasonic detector, digital image scanner, electrically conductive elastomeric membrane, or electrically conductive silicon rubber do the same thing as the sensors of Torbet et al. in substantially the same way with substantially the same results, the use of any one of an infrared sensor, an ultrasonic detector, a digital image scanner, an electrically conductive elastomeric membrane, or electrically conductive silicon rubber to transmit input sensing signals from the sensing mat to the microprocessor control would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely changing the type of sensor used to perform the same function is not unobvious. (See *Brunswick Corporation v. Champion Spark Plug Company*, 216 USPQ 1 (CA 7 1982).

Further, Applicants have shown no criticality as to why the sensing mat must utilize either an infrared sensor, an ultrasonic detector, a digital image scanner, an

electrically conductive elastomeric membrane, or electrically conductive silicon rubber to transmit input sensing signals from the sensing mat to the microprocessor control (i.e., why an equivalent system or structure would not work just as well).

**As to claim 40**, Torbet et al. in view of Chapman et al. discloses the system of claim 38 as discussed above, and Torbet et al. in view of Chapman et al. fail to explicitly disclose that the mat comprises an induction system combined with a piece of metal foil situated under the user, and wherein displacement of the metal foil modifies a self-induction coefficient of an induction coil, thereby shifting the resonant frequency of an LC circuit away from the tuning frequency of an oscillator and damping the signal delivered to an amplifier by the oscillator to ensure that the signal is correctly processed and appropriately monitored.

However, it is well settled that "[g]enerally, it is not invention to change size or degree of thing or of any feature or function of machine or manufacture; there is no invention where change does not involve different concept, purposes, or objects, but amounts to doing the same thing substantially the same way with better results." (See *Hobbs v. Wisconsin Power and Light Company et al.*, 115 USPQ 371 (CA 1957).) Thus, since using an induction system combined with a piece of metal foil situated under the user would do the same thing as the sensors of Torbet et al. in substantially the same way with substantially the same results, the use the induction system and metal foil would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely

changing the type of sensor used to perform the same function is not unobvious. (See *Brunswick Corporation v. Champion Spark Plug Company*, 216 USPQ 1 (CA 7 1982).

Further, Applicants have not shown any criticality as to why the mat must comprises an induction system combined with a piece of metal foil situated under the user, and wherein displacement of the metal foil modifies a self-induction coefficient of an induction coil, thereby shifting the resonant frequency of an LC circuit away from the tuning frequency of an oscillator and damping the signal delivered to an amplifier by the oscillator to ensure that the signal is correctly processed and appropriately monitored (i.e., why an equivalent system or structure would not work just as well).

**As to claim 41**, Torbet et al. in view of Chapman et al. discloses the system of claim 38 as discussed above, and Torbet et al. in view of Chapman et al. fail to explicitly disclose that the mat comprises a capacitive array which is interconnected with the pumping/control unit under microprocessor control, and wherein the a pumping/control unit under microprocessor control supplies to the capacitive array a suitable oscillator derived driver current and concurrently senses capacitance value changes within the capacitive array induced through dielectric shifts within the array brought about by the proximity or absence thereof of the user's body mass.

However, it is well settled that "[g]enerally, it is not invention to change size or degree of thing or of any feature or function of machine or manufacture; there is no invention where change does not involve different concept, purposes, or objects, but amounts to doing the same thing substantially the same way with better results." (See *Hobbs v. Wisconsin Power and Light Company et al.*, 115 USPQ 371 (CA 1957).)

Thus, since using a capacitive array would do the same thing as the sensors of Torbet et al. in substantially the same way with substantially the same results, the use the capacitive array would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely changing the type of sensor used to perform the same function is not unobvious. (See *Brunswick Corporation v. Champion Spark Plug Company*, 216 USPQ 1 (CA 7 1982).

Further, Applicants have not shown any criticality as to why the mat must comprises a capacitive array which is interconnected with the pumping/control unit under microprocessor control, and wherein the a pumping/control unit under microprocessor control supplies to the capacitive array a suitable oscillator derived driver current and concurrently senses capacitance value changes within the capacitive array induced through dielectric shifts within the array brought about by the proximity or absence thereof of the user's body mass (i.e., why an equivalent system or structure would not work just as well).

**As to claim 42**, Torbet et al. in view of Chapman et al. discloses the system of claim 38 as discussed above, and Torbet et al. in view of Chapman et al. fail to explicitly disclose that the pumping/control unit under microprocessor control comprises a power supply, a driver/sensor circuit, a comparator/calibration logic circuit, a system interconnection integrity circuit and an alarm generation circuit.

However, it is well settled that "[g]enerally, it is not invention to change size or degree of thing or of any feature or function of machine or manufacture; there is no

invention where change does not involve different concept, purposes, or objects, but amounts to doing the same thing substantially the same way with better results." (See *Hobbs v. Wisconsin Power and Light Company et al.*, 115 USPQ 371 (CA 1957).) Thus, since using a pumping/control unit under microprocessor control comprising a power supply, a driver/sensor circuit, a comparator/calibration logic circuit, a system interconnection integrity circuit and an alarm generation circuit would do the same thing as the sensor system of Torbet et al. in substantially the same way with substantially the same results, the use the power supply, driver/sensor circuit, comparator/calibration logic circuit, system interconnection integrity circuit and alarm generation circuit would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely changing the type of sensor used to perform the same function is not unobvious. (See *Brunswick Corporation v. Champion Spark Plug Company*, 216 USPQ 1 (CA 7 1982).

Further, Applicants have not shown any criticality as to why the pumping/control unit under microprocessor control must comprise a power supply, a driver/sensor circuit, a comparator/calibration logic circuit, a system interconnection integrity circuit and an alarm generation circuit (i.e., why an equivalent system or structure would not work just as well).

**As to claim 43**, Torbet et al. in view of Chapman et al. discloses the system of claim 42 as discussed above, and Torbet et al. in view of Chapman et al. fail to explicitly disclose that the pumping/control unit under microprocessor control comprises a nurse call relay circuit for interconnection to a facilities nurse call system.

However, it is well settled that "[g]enerally, it is not invention to change size or degree of thing or of any feature or function of machine or manufacture; there is no invention where change does not involve different concept, purposes, or objects, but amounts to doing the same thing substantially the same way with better results." (See *Hobbs v. Wisconsin Power and Light Company et al.*, 115 USPQ 371 (CA 1957).) Thus, since providing a nurse call relay circuit would not at all affect the functioning of adjustable mattress and pillow system and the adjustable mattress and pillow system of the combination of Torbet et al. and Chapman et al. would function in substantially the same way with substantially the same results, the nurse call relay circuit would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely adding optional structure that would not affect the performance of the invention is not unobvious. (See *Brunswick Corporation v. Champion Spark Plug Company*, 216 USPQ 1 (CA 7 1982).

Further, Applicants have not shown any criticality as to why the pumping/control unit under microprocessor control must comprise a nurse call relay circuit for interconnection to a facilities nurse call system.

**As to claim 44**, Torbet et al. in view of Chapman et al. discloses the system of claim 42 as discussed above, and Torbet et al. in view of Chapman et al. fail to explicitly disclose that the system further comprises a proximity induced non-compressive dielectric shift sensing mechanism.

However, it is well settled that "[g]enerally, it is not invention to change size or degree of thing or of any feature or function of machine or manufacture; there is no

invention where change does not involve different concept, purposes, or objects, but amounts to doing the same thing substantially the same way with better results." (See *Hobbs v. Wisconsin Power and Light Company et al.*, 115 USPQ 371 (CA 1957).) Thus, since using a proximity induced non-compressive dielectric shift sensing mechanism would do the same thing as the sensor system of Torbet et al. in substantially the same way with substantially the same results, the use proximity induced non-compressive dielectric shift sensing mechanism would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely changing the type of sensor used to perform the same function is not unobvious. (See *Brunswick Corporation v. Champion Spark Plug Company*, 216 USPQ 1 (CA 7 1982).

Further, Applicants have not shown any criticality as to why the system must comprises a proximity induced non-compressive dielectric shift sensing mechanism (i.e., why an equivalent system or structure would not work just as well).

**Claims 10, 21 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torbet et al. (U.S. Patent Application Publication No. 2003/0221261) in view of Chapman et al. (U.S. Patent Application Publication No. 2003/0182728), as applied to claim 1 above, and further in view of Richardson (U.S. Patent Application Publication No. 2003/0014819).**

**As to claim 10**, Torbet et al. in view of Chapman et al. discloses the system of claim 1 as discussed above.

However, Torbet et al. in view of Chapman et al. fail to explicitly disclose that the pillow comprises a cushioning material that envelops the inflatable pillow compartments.

Richardson (see Figs. 2 and 3) discloses a pillow (10) having an inflatable pillow compartment (12) enveloped by a cushioning material (14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable mattress and pillow system of Torbet et al. in view of Chapman et al. by providing a cushioning material to envelop the inflatable pillow compartments as taught by Richardson in order to provide a more soft and comfortable sleeping surface for a users head and neck.

**As to claim 21**, Torbet et al. in view of Chapman et al. disclose the system of claim 12 as discussed above.

However, Torbet et al. in view of Chapman et al. fail to explicitly disclose that the pillow comprises a cushioning material that envelops the inflatable pillow compartments.

Richardson (see Figs. 2 and 3) discloses a pillow (10) having an inflatable pillow compartment (12) enveloped by a cushioning material (14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable mattress and pillow system of Torbet et al. in view of Chapman et al. by providing a cushioning material to envelop the inflatable pillow compartments as taught by Richardson in order to provide a more soft and comfortable sleeping surface for a users head and neck.

**As to claim 34**, Torbet et al. in view of Chapman et al. disclose the method of claim 27 as discussed above.

However, Torbet et al. in view of Chapman et al. fail to explicitly disclose that the pillow comprises a cushioning material that envelops the inflatable pillow compartments.

Richardson (see Figs. 2 and 3) discloses a pillow (10) having an inflatable pillow compartment (12) enveloped by a cushioning material (14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable mattress and pillow system of Torbet et al. in view of Chapman et al. by providing a cushioning material to envelop the inflatable pillow compartments as taught by Richardson in order to provide a more soft and comfortable sleeping surface for a users head and neck.

**Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torbet et al. (U.S. Patent Application Publication No. 2003/0221261) in view of Chapman et al. (U.S. Patent Application Publication No. 2003/0182728), as applied to claims 1 or claim 12 above, and further in view of Bartlett et al. (U.S. Patent No. 6,353,950).**

**As to claim 23**, Torbet et al. in view of Chapman et al. disclose an apparatus for supporting a subject (35, 36) in a variable, substantially prone positions (see Figs. 13 and 14 of Torbet et al.), comprising a mattress ($1_3$) and pillow (86, 86') system (1) of claims 1 or 12 as discussed above, and Torbet et al. also disclose that the mattress ($1_3$) and pillow (86, 86') system (1) is supported by a frame (21).

However, Torbet et al. in view of Chapman et al. fail to explicitly disclose that the fluid reservoir, pumping/control units, and microprocessor control are also supported by the frame.

Bartlett et al. disclose that the control unit (38) is supported on the bed frame (11) and the control unit (38) includes fluid reservoir (blower 47), pumping/control units (blower relay 48), and microprocessor control (processor unit 42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable mattress and pillow system of Torbet et al. in view of Chapman et al. by supporting the control unit on the bed frame as taught by Bartlett et al. in order to provide a compact system so that components do not get lost or disconnected.

**As to claim 24**, Torbet et al. in view of Chapman et al. and Bartlett et al. discloses the apparatus of claim 23 as discussed above, and Torbet et al. also disclose that the apparatus is any one of a bed (bed (1) in Fig. 1), a stretcher, an examining table, or an operating table.

### *Response to Arguments*

Applicant's arguments filed 25 October 2005 have been fully considered but they are not persuasive.

Applicants argue that:

> *Torbet's* and *Chapman's* systems differ fundamentally from those of the instant invention and claims 1-9, 11-20, 22, 25-33, and 35-44 are patentable over *Torbet* and *Chapman*, whether those references are taken alone or in any combination. Unlike *Torbet*, the adjustable mattress and

pillow systems of the claimed invention comprise both a mattress and pillow which adapt, based on a user's position on the mattress and in response to variation of such position, to an optimum contour for support of the user's body. The electrically conductive sensing mat used in the claimed invention receives and processes electrical signals from the mat which vary in relationship to the width of mat area compressed by the user and the pressure exerted on the mat as the position of the user shifts.

The air/fluid compartments of the pillow and mattress used in the instant invention may be inflated or deflated based on a user's presetting control parameters that modulate microprocessor-controlled valves. In the claimed invention, the contours of the pillow and mattress adapt to a preset contour selected by the user as an optimum profile for his or her body and head shape ms presented in different sleeping poses.

As conceded by the Examiner, *Torbet* fails to disclose optimization of the contours of a mattress and a pillow relative to the position of the user on the mattress and the pillow and in response to variation of such position. There is also no suggestion in *Torbet* that, under appropriate circumstances, an adjustable pillow's contours could be altered independently of an associated mattress's contours to achieve a preprogrammed optimized sleep configuration for a combined mattress and pillow system. Thus, *Torbet* also lacks any description of regulating a pumping control system and associated valves to maintain a preprogrammed optimized sleep configuration for a combined mattress and pillow system.

*Chapman 's* pressure pad is intended to prevent pressure-associated sores by inflating and deflating rows of cells that support an entire body. *Chapman* relies on pressure differentials at the head, torso, leg, and heel positions to achieve optimum support. See *Chapman*, ¶ 36. *Chapman* does not suggest that his pressure pad could be reconfigured as an adjustable pillow which is integrated with an adjustable mattress to provide a mattress and pillow system of the instant invention.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Furthermore, Applicants' argument that Chapman does not disclose that his "pressure pad" could be an adjustable pillow and integrated with an adjustable mattress has been dealt with in each of the rejections of the independent claims where the examiner has noted that:

> Chapman et al. appear to disclose the adjustable inflatable pad for use as a pad covering the head, torso, upper leg, and heel sections of a user. However, to have formed the Chapman et al. pad of any particular size including a pillow size, thus allowing for any particular use around or under any given section of a user including the head, while also saving on costs and material, as well as place, or utilize, such smaller head pad upon the adjustable mattress of Torbet et al., thus providing Torbet et al. with a pillow pad for the head of a user, as is customarily employed by anyone sleeping or lying upon a mattress, would have constituted an obvious expedient to one having ordinary skill in the art at the time the invention was made as taught by Chapman et al. and as it is widely held that where the only difference between the prior ad and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

In other words, Chapman et al. is nothing more or less than a big pillow, (e.g., body pillow), which can be adjusted in size to fit any particular use and environment.

Finally, Applicants' arguments that there is no legitimate basis to combine Torbet et al. and Chapman et al. (and Richardson or Bartlett et al.) and that any combination of Torbet et al. and Chapman et al. (and Richardson or Bartlett et al.) amounts to impermissible hindsight are not persuasive. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or

motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In the instant case, Torbet et al. is clearly providing a mattress that has a pad with sensors so as to be able to adjust the amount of air in the cells depending upon how the user's move and shift on the bed. Although Torbet et al. do not also teach a pillow having air cells therein that also adjusts as to amount of air based upon the sensors in the mat sensing the movement of the user's, such would have been obvious in view of Chapman et al. for the reasons stated above.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gay Ann Spahn whose telephone number is (571)-272-7731. The examiner can normally be reached on Monday through Thursday, 8:30 am to 7:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is (571)-272-8300.

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Gay Ann Spahn, Patent Examiner
November 16, 2005

MICHAEL SAFAVI
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